	Application No.	Applicant(s)
Notice of Allowability	10/769,877	BROWN ET AL.
	Examiner	Art Unit
	Elias Desta	2857
The MAILING DATE of this communication appe All claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RI of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED or other appropriate comm GHTS. This application is and MPEP 1308.	in this application. If not included nunication will be mailed in due course. <b>THIS</b>
1. This communication is responsive to <u>application filed on Fe</u>	ebruary 03, 2004.	
2. ☑ The allowed claim(s) is/are <u>20-28</u> .		
3. $\bowtie$ The drawings filed on <u>03 February 2004</u> are accepted by the	ne Examiner.	
<ul> <li>4. ☐ Acknowledgment is made of a claim for foreign priority una) ☐ All b) ☐ Some* c) ☐ None of the:</li> <li>1. ☐ Certified copies of the priority documents have</li> <li>2. ☐ Certified copies of the priority documents have</li> <li>3. ☐ Copies of the certified copies of the priority documents have</li> <li>International Bureau (PCT Rule 17.2(a)).</li> <li>* Certified copies not received:</li> </ul>	been received. been received in Applicat	ion No
Applicant has THREE MONTHS FROM THE "MAILING DATE" on noted below. Failure to timely comply will result in ABANDONM THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.		le a reply complying with the requirements
5. A SUBSTITUTE OATH OR DECLARATION must be submit INFORMAL PATENT APPLICATION (PTO-152) which give		
6. CORRECTED DRAWINGS (as "replacement sheets") mus	t be submitted.	
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached		
1)  hereto or 2)  to Paper No./Mail Date		
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date		
Identifying indicia such as the application number (see 37 CFR 1, each sheet. Replacement sheet(s) should be labeled as such in the		
7. DEPOSIT OF and/or INFORMATION about the deposit attached Examiner's comment regarding REQUIREMENT	sit of BIOLOGICAL MA <sup>T</sup> FOR THE DEPOSIT OF B	TERIAL must be submitted. Note the IOLOGICAL MATERIAL.
Attachment(s)  1. Notice of References Cited (PTO-892)  2. Notice of Draftperson's Patent Drawing Review (PTO-948)  3. Information Disclosure Statements (PTO-1449 or PTO/SB/0 Paper No./Mail Date  4. Examiner's Comment Regarding Requirement for Deposit of Biological Material	6. ☐ Interview Paper No 8), 7. ☒ Examiner	Informal Patent Application (PTO-152) Summary (PTO-413), b./Mail Date Is Amendment/Comment Is Statement of Reasons for Allowance

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## **Detailed Action**

1. The examiner acknowledges the cancellation of claims 1-19 in the fee transmittal of the new application.

## Allowance

2. Claims 20-28 are allowed. The following is an examiner's statement of reasons for allowance:

In reference to claim 20: Griffith et al. (U.S. Patent 4,081,995) teaches an apparatus for measuring revolution rate of a rotating gear or crankshaft (see Griffith et al., Abstract). The apparatus includes:

- A memory coupled to the edge detector (see <u>Griffith et al.</u>, Fig. 5, member 54, previous period holding register), the memory configured to receive from the edge detector the plurality of pulse values, the memory being configured to store the plurality of pulse values with time content or as a function of time; and
- A pulse-input source is coupled to the edge detector as shown in Fig. 5, and then the edge detector is connected to the memory. The pulse-input source is configured to measure the reference pulses and provides a means to measure the pulse-to-pulse difference based on the reference values (see *Griffith et al.*, column 8, lines 19-21)

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The claimed invention provides a pulse-input measurement system having at least three redundant subsystems, each subsystem having:

- ➤ An input filter network configured to receive an input signal to produce a filtered signal;
- ➤ A comparator coupled to the input filter network, the comparator configured to receive the filtered signal and produce a comparator signal; and
- ➤ An input-output controller coupled to the comparator, the input-output controller configured to receive the comparator signal and produce a pulse-to-pulse delay value.

Unlike the arrangement in <u>Griffith et al.</u>, the memory with the claimed invention is directly tied to the two source signals and as well as time variables. The time values are used to compute the pulse-to-pulse delays based on prior knowledge of the pulse sequence, whereas <u>Griffith et al.</u> teaches time difference between two pulses without any consideration of a pulse delay factor.

The remaining  $\underline{claims\ 21-28}$  are dependent upon  $\underline{claim\ 20}$  and contain further limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

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"Comments on Statement of Reasons for Allowance."

## Conclusion

- 3. The prior art made of record and not relied upon is considered pertinent to applicant disclosure.
  - > <u>Rowland et al</u>. (U.S. Patent 6,535,811) teaches system and method for real-time electronic engine control.
  - Tanaya et al. (U.S. Patent 6,427,662) teaches knock control apparatus for internal combustion engine.
- 4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Thu (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-5841 for regular communications and After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.

Elias Desta Examiner Art Unit 2857

-ed

July 6, 2004

MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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